Amendment to the Specification

Please amend the paragraph bridging pages 1 and 2 in the following manner:

Japanese Laid-Open Patent Application Publication No. 10-233859 explains a conventional technology in which superimposed image data are output on a recording sheet. In the above-mentioned technology, overlaid image data are detected by a printer driver for determining specific image data that are overlaid and data transfer to a printing medium may decrease by omitting a part of image data which are overlaid. Thereby, data processing in printing is also expected to decrease by means of replacing overlaid part of image data to produce identical color image data. In another example of conventional technology, Japanese Laid-Open Patent Application Publication No. 10-333852 describes a technology in which coordinates of the circumscribed rectangles of characters and figures, not limited to graphic image data, are obtained, abstraction of the obtained coordinates of the circumscribed rectangle is performed and an overlay of image data is detected with reference to the coordinates of the rectangle. In Japanese Laid-Open Patent Application Publication No. 11-119930, the time when rendering of image data is finished is anticipated and when it is determined that the rendering of image data may not be further developed at a predetermined interval thereafter, overlaid image data portion is detected between overlaid intermediate data whose rendering range of characters or graphics is divided in every ~~trapeziod~~ trapezoid. The above-described conventional overlay detection technologies in which image data which are overlaid are detected on the side of a printer driver have a defect in that the above-described technologies are specific and limited to image data and in that as a result information processing for omitting overlaid portion of image data increases.

Please amend the paragraph bridging pages 3 and 4 in the following manner:

To achieve the above-mentioned objects and other objects, a novel image processing apparatus includes an overlay detector and a memory. The novel image processing apparatus sequentially processes graphic rendering instructions for image data. The graphic rendering instructions include first and second graphic rendering instructions. The first graphic rendering instruction is input immediately preceding the second graphic rendering instruction.

The first graphic rendering instruction contains first rendering data representing a first original image to render a first output image. The second graphic rendering instruction contains second rendering data representing a second original image to render a second output image. The first original image is overlaid by the second original image. The overlay detector performs an overlay detection to detect an overlay of the first and second images which are rendered based on the first and second rendering data by the first and second rendering instructions, respectively. The memory stores the first rendering data contained in the first graphic rendering instruction. The overlay detector specifies a portion of the first original image overlaid by the second original image upon detecting an overlay of the first and second original images, deletes ~~a specified portion in which~~ the specified portion of the first original image which is ~~deleted~~ overlaid by the second original image and draws a third output image, based on the first original image and stores the second graphic rendering data into the memory.

Please amend the paragraph at page 4, lines 14-19 in the following manner:

The graphic rendering instructions may be a page description language (PDL) and each of the graphic rendering instructions may include a fundamental graphic description instruction which handles characters, graphics and images and a rendering attribute instruction handling colors, clipping area designations and rendering arithmetic methods.

Please amend the paragraph at page 5, lines 5-14 in the following manner:

When the overlay detector detects an ~~overly~~ overlay of the run aggregate figures, the overlay detecting mechanism may generate a circumscribing rectangle for the run aggregate figure of the first and second original images and, after the overlay detecting mechanism detects an overlay between the circumscribing rectangle for the run aggregate figure for the first and second original images, may determine the run aggregate figure included in the run aggregate figure of an overlaid portion between the first and second original images of the circumscribed rectangle.

Please amend the paragraph bridging pages 7 and 8 in the following manner:

When the overlay detector detects an ~~overly~~ overlay of the run aggregate figures, the overlay detecting mechanism may generate a circumscribing rectangle for the run aggregate figure of the first and second original images and, after the overlay detecting mechanism detects an overlay between the circumscribing rectangle for the run aggregate figure for the first and second original images, may determine the run aggregate figure included in the run aggregate figure of an overlaid portion between the first and second original images of the circumscribed rectangle.

Please amend the paragraph at page 10, lines 11-20 in the following manner:

When the overlay detector detects an ~~overly~~ overlay of the run aggregate figures, the overlay detecting mechanism may generate a circumscribing rectangle for the run aggregate figure of the first and second original images and, after the overlay detecting mechanism detects an overlay between the circumscribing rectangle for the run aggregate figure for the first and second original images, may determine the run aggregate figure included in the run aggregate figure of an overlaid portion between the first and second original images of the circumscribed rectangle.

Please amend the paragraph at page 13, lines 3-12 in the following manner:

When the overlay detector detects an ~~overly~~ overlay of the run aggregate figures, the overlay detecting mechanism may generate a circumscribing rectangle for the run aggregate figure of the first and second original images and, after the overlay detecting mechanism detects an overlay between the circumscribing rectangle for the run aggregate figure for the first and second original images, may determine the run aggregate figure included in the run aggregate figure of an overlaid portion between the first and second original images of the circumscribed rectangle.

Please amend the paragraph bridging pages 15 and 16 in the following manner:

When the overlay detector detects an ~~overly~~ overlay of the run aggregate figures, the overlay detecting mechanism may generate a circumscribing rectangle for the run aggregate figure of the first and second original images and, after the overlay detecting mechanism detects an overlay between the circumscribing rectangle for the run aggregate figure for the first and second original images, may determine whether the run aggregate figure included in the run aggregate figure of an overlaid portion between the first and second original images of the circumscribed rectangle.

Please amend the Brief Description Of The Drawings section at page 16, line 15 through page 17, line 23 in the following manner:

BRIEF DESCRIPTION OF THE DRAWINGS

A more complete appreciation of the disclosure and many of the attendant advantages thereof will be readily obtained as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying renderings, wherein:

FIG. 1 is a block diagram showing an exemplary structure of a printer controller including an image processing apparatus used when an overlay detection is performed in a printing machine in according to a preferred embodiment;

FIG. 2 is a block diagram showing an exemplary structure of a printer driver including the image processing apparatus used when an overlay detection is performed in a host computer according to the preferred embodiment;

~~FIG. 3 is a diagram showing~~ FIGS. 3A through 3C collectively show an exemplary illustration of an overlay detection of a rectangle performed in a graphic overlay determination unit of FIG. 1;

FIG. 4 is a flowchart showing an exemplary procedure of an overlay detection of rectangle;

~~FIG. 5 is a diagram showing~~ FIGS. 5A through 5C collectively show another exemplary illustration of an overlay detection of a rectangle performed in a graphic overlay determination unit of FIG. 1;

~~FIG. 6 is a diagram showing~~ FIGS. 6A through 6C collectively show an exemplary

illustration of an overlay detection of a run aggregate rendering performed in a graphic overlay determination unit of FIG. 1; and,

~~FIG. 7 is a diagram showing~~ FIGS. 7A through 7D collectively show another exemplary illustration of an overlay detection of a run aggregate rendering performed in a graphic overlay determination unit of FIG. 1.

Please amend the paragraph at page 20, lines 13-24 in the following manner:

Referring now to FIG. 2, a block diagram illustrating an exemplary structure of a printer driver 102 including a graphic overlay processing unit 3 which is an ~~mage~~ image processing apparatus in the embodiment is shown. As shown in FIG. 2, the printer driver 102 which is connected to an application 101 and a printing apparatus 104 includes the graphic overlay processing unit 3 including the graphic overlay detection unit 11 and the immediately preceding graphic data memory 21 which is substantially equivalent to apparatus of FIG. 1. The printer driver 102 further includes a PDL language generating unit 110, a PDL language output unit 112 and a central processing unit (CPU) 114.

Please amend the paragraph at page 26, lines 9-20 in the following manner:

Referring to Steps ~~404S~~ S404 through ~~406S~~ S406, when the CPU 14 determines that the overlay detection process is not finished in Step S401, the CPU 14 determines whether a target figure (e.g. a figure of FIG. 3B) to be processed is not a rectangle in Step S404. When the target figure is not a rectangle, the CPU 14 determines in Step S405 whether the figure stored in the immediately preceding graphic data memory 21 is a rectangle. If the CPU 14 determines that the figure stored in the immediately preceding graphic data memory 21 is a rectangle, the CPU 14 instructs to render the rectangle stored in the immediately preceding graphic data.

Please amend the paragraph bridging pages 27 and 28 in the following manner:

When the result of Step S404 is YES, that is, when the CPU 14 determines that the target figure to be processed is a rectangle, the CPU determines in Step S408 whether the figure stored in the immediately preceding graphic data memory 21 is a rectangle. When the

CPU 14 determines that the figure stored in the immediately preceding graphic data memory 21 is a rectangle, the CPU 14 examines the relationship of position between the target figure to be processed and the immediately preceding figure stored in the immediately preceding graphic data memory 21. In Step S409, the CPU 14 determines whether the target figure to be processed and the figure stored in the immediately preceding graphic data memory 21 have an overlay portion. When the CPU 14 determines that the target figure to be processed and the figure stored in the immediately preceding graphic data memory 21 have an overlaid portion in Step S409, the CPU 14 divides the immediately preceding graphic data or creates a rectangle whose coordinates data are changed to reduce the overlaid portion in Step S410. Then, in Step S411, the CPU 14 renders the divided rectangle ~~in~~ of Step S410. When the CPU 14 determines that the target figure to be processed and the figure stored in the immediately preceding graphic data memory 21 have no overlaid portion in Step S409, the CPU instructs to render the immediately preceding rectangle in Step S411. In Step S412, when the result is NO after referring to Step S408, the CPU 14 instructs to store the target figure presently being processed into the immediately preceding graphic data memory 21 for future use.

Please amend the paragraph bridging pages 32 and 33 in the following manner:

Each of the data run aggregates represents a data block which extends from a start point sx to an end point ex in the horizontal direction X along the axis x with an arbitrary point in the coordinate y. The data run aggregates as described above are used to specify a range of rendering instructions as rendering instructions. The data run aggregates of FIG. 6A are a first figure which are firstly rendered and the data run aggregates of FIG. 6B are a second figure which are secondly rendered. As is same with the case of the above-described rectangle process, it is assumed that the data run aggregates of FIGs. 6A and 6B are arranged adjacently. The density of the color images of FIGs. 6A and 6B are arbitrary, respectively. The figure of FIG. 6C is created from a process of an overlay of the second figure of FIG. 6B on the first figure of 6A, that is, the first figure of 6A is overwritten by the figure of FIG. 6B. A left part of the figure of FIG. 6A is not rendered because the data run aggregates of FIG. 6B are overwritten on a part of the data run aggregates of FIG. 6A in which the first figure of 6A

and the second figure of 6B are overlaid. Therefore, the process of the overlaid part is unnecessary because the data run aggregates of FIG. 6B are overwritten on a part of the data run aggregates of FIG. 6A. In order to obtain the figure of FIG. 6C, a portion of FIG. 6A that is not overlaid with the figure of FIG. 6B and the whole portion of data run aggregates of FIG. 6B are added to each other. A process of the above-described addition of the two figures for rendering is the best way to process graphic data without processing overlaid graphic portion by omitting a redundant process, thereby reducing the amount of rendering process.